CLAIMS

1. A metering device for use in a plastics, the device comprising:

a block interposed between at least one feeding passage connected to one or more mould cavities;

at least one cylinder formed in the block for each of the mould cavities;

a single acting piston reciprocably mounted in each cylinder;

an adjustable stop associated with each piston for enabling a predetermined quantity of the plastics melt injected into at least one of the cavities to be set independently of the other cavities;

wherein the block includes formed therein

a first passages to connect the cylinder to the feeding passage;

a second passages to connect the cylinder to each of the mould cavities associated therewith;

one or more valves for enabling the cylinder first to be filled with a desired dose of a plastics melt by the feeding passage without the plastic melt entering the mould cavities and for subsequently enabling the desired doses of plastics melt when ejected from the cylinder by the piston to flow from the cylinder to the respective mould cavities without being returned to the feeding passage.

2. The metering device of claim 1, further comprising:

at least one actuator for advancing the pistons into at least one cylinder.

3. The metering device of claim 2, wherein the actuator is selected from a group of actuators consisting of hydraulic actuators, pneumatic actuators, and electro-mechanical actuators.

4. The metering device of claim 1, wherein, the valves further comprise spool valves wherein each spool has a first position that allows communication only between the cylinder and the feeding passage associated therewith and a second position that allows communication only between the cylinder and the mould cavity associated therewith.

5. The metering device of claim 3, wherein, the valves further comprise spool valves wherein each spool has a first position that allows communication only between the cylinder and the feeding passage associated therewith and a second position that allows communication only between the cylinder and the mould cavity associated therewith

6. The metering device of claim 1, wherein the valves include non-return valves which only allow the plastic melt to flow in the direction from the feeding passage to the cylinder associated therewith.

7. The metering device of claim 3, wherein the valves include non-return valves which only allow the plastic melt to flow in the direction from the feeding passage to the cylinder associated therewith.

8. The metering device of claim 5, wherein the valves include non-return valves which only allow the plastic melt to flow in the direction from the feeding passage to the cylinder associated therewith.

9. The metering device of claim 1, wherein a surface of the piston is in direct contact with the plastic melt to be fed through the passage.

10. The metering device of claim 8, wherein a surface of the piston is in direct contact with the plastic melt to be fed through the passage.

11. The metering device of claim 3, wherein the actuator is part of a platen, which when moved to a position closer to the mold cavities so as to define a minimum mold cavity volume, the piston is urged by the platen to eject the desired doses of plastic from the cylinder.

12. The metering device of claim 11, wherein an axis of the cylinder is parallel to a direction of relative movement of platen when defining a minimum mold cavity volume.

13. The metering device of claim 3, wherein an axis of the cylinder is substantially normal to a direction of relative movement of platen when defining a minimum mold cavity volume.

14. An injection moulding machine for injection compression moulding, the moulding machine comprising:

a mould part with one or more mold cavities, wherein each of the mold cavities is connected to at least one or more feeding passages;

a pressure plate movable relative to the first mould part between a first end position and a second end position in which the mould is respectively opened and closed;

a block holding the first mould part, the block including at least one cylinder formed in the block with at least one single acting piston reciprocably mounted in the cylinder, the piston including a stop for enabling a quantity of the plastics melt injected into the cavities, wherein the block includes formed therein

a first passages to connect the cylinder to at least one of the feeding passages;

a second passage to connect the cylinder to each of the mould cavities associated therewith;

one or more valves for enabling the cylinder first to be filled with a desired dose of a plastics melt by the feeding passage without the plastic melt entering the mould cavities and for subsequently enabling the desired dose of plastics melt when ejected from the cylinder by the single acting piston to flow from the cylinder to the respective mould cavities without being returned to the feeding passage.

15. The injection moulding machine of claim 14, further comprising:
at least one actuator for advancing the single acting piston into the cylinder.

16. The injection moulding machine of claim 15, wherein the actuator is selected from a group of actuators consisting of hydraulic actuators, pneumatic actuators, and electro-mechanical actuators.

17. The injection moulding machine of claim 14, wherein, the valves further comprise spool valves wherein each spool has a first position that allows communication only between the cylinder and the feeding passage associated therewith and a second position that allows communication only between the cylinder and the mould cavity associated therewith.

18. The injection moulding machine of claim 16, wherein, the valves further comprise spool valves wherein each spool has a first position that allows communication only between the cylinder and the feeding passage associated therewith and a second position that allows communication only between the cylinder and the mould cavity associated therewith

19. The injection moulding machine of claim 14, wherein the valves include non-return valves which only allow the plastic melt to flow in the direction from the feeding passage to the cylinder associated therewith.

20. The injection moulding machine of claim 16, wherein an axis of the cylinder is parallel to a direction of relative movement of platen when defining a minimum mold cavity volume.

21. The injection moulding machine of claim 16, wherein an axis of the cylinder is substantially normal to a direction of relative movement of platen when defining a minimum mold cavity volume.